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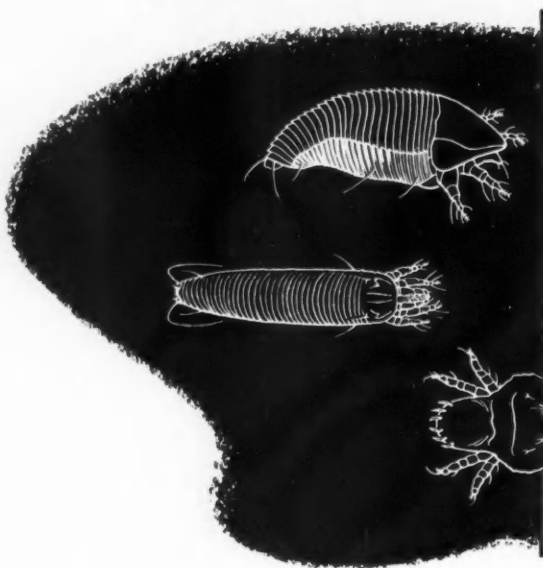


W. MAX ACREE

of DeLand, elected new president of Florida Citrus Mutual at the annual meeting of that organization earlier this month.

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Program For Camp McQuarrie Citrus Institute Announced . . . Meet In The Ocala National Forest, Aug. 8-12

Outstanding among a long list of fine programs are the plans announced this week for the 27th Annual Citrus Growers Institute at Camp McQuarrie, near Astor, in the Ocala National Forest. The program begins with registration Monday afternoon, August 8 and continues thru breakfast, Friday, August 12.

The program is designed for the citrus family, grove caretakers, production managers, packing house managers and industry representatives. It is calculated to be primarily a short course for citrus industry people, but the ladies and children will find a program of interest for them, too.

The Citrus Institutes are directed by the University of Florida Agricultural Extension Service. The program is assembled as the result of joint planning by the Growers Advisory Committee of Lake County and the Extension Service citrus staff.

Sleeping facilities are available in ten cottages set up in dormitory style with certain cottages available for men and others for women and children. There is no charge for the use of the sleeping facilities at the Camp. They are assigned on the basis of the order in which reservations are received. **Persons using the cottages must furnish their own bed linen, pillows, towels, etc.** Meals are served at a nominal price in the camp mess hall.

Reservations for accommodations at the Citrus Institute should be made with R. E. Norris, Lake County Agricultural Agent, Tavares, Florida.

The tentative program follows: (Some changes may be necessary as all program contributors had not responded when this was written.)

Monday, August 8—2:00-6:00 p.m. Registration. During the afternoon—fishing and swimming.
6:15—Supper in the Mess Hall.
8:00—Assembly in the Auditorium. Get acquainted, group singing, etc.

TUESDAY, AUGUST 9

7:15 a.m.—Breakfast—Mess Hall.
8:30—Assemble in the auditorium. Invocation.
Welcome: Karl Lehmann, Secretary, Lake County Chamber of Commerce.
Problems with Pollination and Fruit Setting. Dr. A. H. Krezdorn, Head, Fruit Crops Department, University of Florida.
Citrus Production Management Problems. Dr. L. W. Ziegler, Professor, Citrus Culture, University of Florida College of Agriculture.
Some aspects of the Biological Control Problem in Florida Citrus — Dr. Martin Muma, Entomologist, Citrus Experiment Station, Lake Alfred.
12:00—Noon — Lunch — Mess Hall.
1:30 p.m.—**Citrus Research — the Next 50 Years.** A Special Report on the USDA-Florida Citrus Research Foundation Project — Dr. William C. Cooper, Project Leader, US Department of Agriculture, Orlando.

The Greasy Spot Problem. Dr. Mortimer Cohen, Associate Plant Pathologist, Indian River Field Laboratory.

The Manufacture and Application of Granulated Fertilizer — Harold Garrett, Manager, Fertilizer Division, Minute Maid Corporation.

Farm Machinery Demonstration. Dalton Harrison, Assistant Agricultural Engineer, in charge with the cooperation of the Florida Retail Equipment Dealers Association.

Adjourn for supper and evening entertainment.

WEDNESDAY, AUGUST 10

7:15—Breakfast — Mess Hall.
8:30—Announcements — Auditorium.
The Florida Citrus Industry and the Big Squeeze. Henry F. Swanson, Orange County Agricultural Agent.
The Marketing Disease Problem of Citrus. Dr. John J. Smoot, USDA, Orlando.
A Junior Citrus Grower Looks at the Burrowing Nematode Problem — Ronnie Muraro, Lake County 4-H Club member.
Research with Nematode Tolerant Rootstocks. Dr. Harry Ford, Citrus Experiment Station, Lake Alfred.
The Spreading Decline Research Program. Dr. E. P. DuCharme, Plant Pathologist, Citrus Experiment, Lake Alfred.

12:00—Noon — Lunch — Mess Hall.

1:30 p.m.—**The Federal Income Tax Law and the Citrus Grower.** Laurie Tomlinson, Collector of Internal Revenue and W. O. Daley, Certified Public Accountant, Orlando.

Citrus Aphids and their Control. W. L. Thompson, Entomologist, Citrus Experiment Station, Lake Alfred.
Modern Trends in Handling Florida Fresh Fruit. R. V. Phillips, General Manager, Haines City Citrus Growers Association.

What is Your Liability as a Citrus Grower under the Wage and Hour Law and the Workmen's Compensation Law? Kenneth R. Morefield, Manager, Insurance Division, Florida Fruit and Vegetable Association, Orlando.

Adjourn for supper and entertainment.

THURSDAY, AUGUST 11

7:15 a.m.—Breakfast — Mess Hall.
8:30—Announcements — Auditorium.
Studies on Potash Fertilization of Marsh Grapefruit. Dr. Paul F. Smith, Plant Physiologist, USDA, Orlando.
Variations Among Individual Marsh Grapefruit within a Packed Box — Dr. Williams G. Long, USDA, Orlando.
Results of Experiments with MH-30 in Cold Tolerance Studies with Citrus — Dr. Charles Hendershott, Assistant Plant Physiologist, Citrus Experiment Station, Lake Alfred.
Recent Developments in Methods of Cold Protection — Warren O. Johnson, Meteorologist, in charge, US Weather Forecasting Service, Lakeland.

12:00 — Noon — Lunch.

1:30—**The Reduction of Rind Breakdown by Polyethylene Emulsion Treatments** — Dr. Paul L. Davis, USDA, Orlando.

This Business of Citribusiness in Florida. Dr. E. W. Cake, Economist, Marketing, Agricultural Extension Service.

Adequate Water Levels and their Importance to the Citrus Industry — Dr. Werner Hussman, Manager, Apshawa Groves, Minneola.

Adjourn for supper and entertainment.

FRIDAY — AUGUST 12

7:00 a.m.—Breakfast — Institute Adjourn.

Ladies who desire to attend the citrus classes are welcome to do so. Those desiring to participate in the craft class will find this activity led by a talented instructress.

Small children will be cared for by baby sitters. Older children can enjoy games and water front activities.



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Un-retouched photo shows Mr. Barnes comparing larger and healthier growth of new leaves on tree which received *Tracel limestone* application, with old growth before *Tracel limestone* was applied.

graph was taken eighteen months later, and provides authentic evidence of the advantages when *Tracel limestone* is used for Florida citrus groves.

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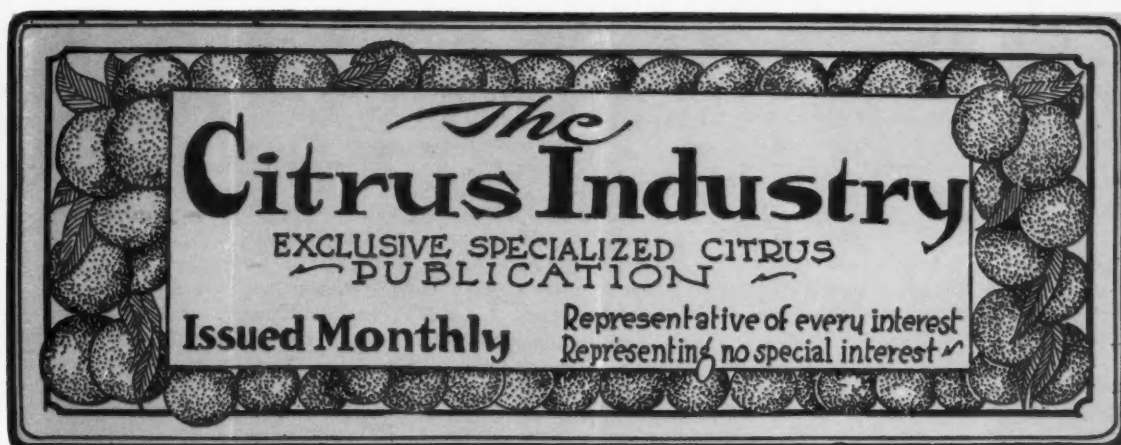
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Drainage Criteria For Flatwoods

Citrus . . . DALTON S. HARRISON
Asst. Agricultural Engineer
Florida Agri. Extension Service

Presented At
South Florida Citrus Institute
May 31, 1960

Before we can fully understand and appreciate the problems encountered in drainage and irrigation of flatwoods soils for citrus production, we must have some basic concepts of soil water and its hydraulic principles and characteristics. For example, we must know the life cycle of certain insect pests before we can fully evaluate our spray program. There should be no change in our concepts and thinking when we apply or take away such a vital part of a plant's life as water. Yet, we add water not knowing much about how much we add as sub-surface irrigation and we take away water after excessive rainfall until the attendant operating the pump informs us that the ditch is dry.

Research workers have shown that 15-year old citrus trees growing on ridge soils require .08-.14 inches of water each day — the larger amount being required during our hot or summer season. Citrus grown on our flatwoods soils shouldn't require any greater or lesser amount, since water requirement is basically correlated with daily mean temperature and day length, and not with soil moisture conditions. It is the management of this soil water with which we are primarily concerned.

Water is removed from the soil by plants and nature through three principle means — these are surface run-off, gravitational, and capillary. Only one of these forms is available for plant use, capillary water. It is this capillary moisture or capillary conductivity which most vitally con-

cerns us in our design and management of drainage and irrigation of our flatwoods soils. As our soil water moves through the soil particles, it is found to occur in three forms — gravitational, capillary, and hygroscopic.

The following sub-headings are merely a few of the soil and water problems we should consider when we attempt to expand our citrus production to the flatwoods soils:

Movement of Soil Water by Means of Capillary Conductivity

In sandy soils the capillary permeability becomes zero as the moisture contents reaches 5.0 per cent. There is a very rapid decrease in capillary conductivity with increasing tensions. In other words, as the soil becomes dry and approaches a moisture content of 5.0 per cent, capillary conductivity or movement of soil water by means of capillary action is practically zero.

For example, at tensions of approximately 60 cm. of water or approximate field capacity for certain sands, capillary conductivity is 0.0095 inches per hour while at 200 cm. tension or 1/5 atmosphere, the capillary conductivity is only 0.000047 inches per hour. This emphasizes the low moisture movement in our sandy soils dur-

ing droughty conditions. They not only have a low water holding capacity but also a very slow moisture movement at the higher tensions.

Thus, water movement in sandy soils by means of capillary conductivity is highest when the soil is wet and decreases rapidly as the soil becomes deficient in moisture. This points to the necessity of maintaining a water table sufficiently high to maintain good capillarity and at the same time low so as not to damage the 40 to 84 per cent of the feeder roots which are in the top 6 inches of the soil.

The well known soil physicist Nivar found that the upward movement of soil water from below 12 inches was exceedingly slow after the moisture content was reduced to field capacity. Rotmistrov of Russia stated that water that penetrates beyond 16 to 20 inches does not return to the surface except by way of plant roots. Keen has calculated the capillary rise in coarse sands and fine sands to be 1½ and 7½ feet, respectively.

Water losses by evaporation in coarse sands have been observed to lower the water table about 14 inches during 6-7 months. This further emphasizes the point that the upward rise of soil water by capillary conductivity is very slow.

Some Important Considerations in Tile and Open Ditch Drainage

When we consider tile vs. open ditch drainage, there are two rather practical considerations which must be weighed: First, the soil must not

be so impervious from the surface downward so as to make a tile system inefficient. In these cases, open ditches are the only practical system. Secondly, open ditches may be of an economic disadvantage in that they seriously affect the field operations and take up too much grove space.

The most important consideration where a poorly drained flatwood soil is used for citrus production is "Which system has the greatest effect upon lowering the water table between drains?" The height and the shape of the water table are affected by substituting tile drains for open ditches. Open ditches permit water to seep through a larger surface than buried tile, resulting in a lower water table for the ditch. Also, there is a greater reduction in the height of the water table immediately adjacent to the ditch than to a tile drain.

Tile Drains: The diameter of the tile does influence drainage practices. It has been shown that by increasing the diameter of the tile from 4 inches to 24 inches, we can lower the height of the water table as much as 3 feet at the midpoint between drains 30 feet apart. The size of the tile on water flow has a much lesser effect than the depth to which they are placed. In addition, the space between tile has the most pronounced effect on rate of flow into the tile.

Normal procedure is to space tile 1/32 inch apart; however, it has been shown that if the spacing is 1/16 inch the rate of flow of water into the tile will increase 10 per cent. If the spacing is 1/8 inch, the rate of flow into the tile will increase 36 per cent. When the tile is imbedded in gravel, the rate of flow is increased 180 per cent.

The question arises then whether to use tile and space at the greater spacings or to use perforated pipe. Research has shown that for a 6-inch tile placed at 4-foot depth and spaced on 1/4-inch spacings, we would need a minimum of 17 holes per foot of perforated pipe to give a proportionate flow. If the spacing was increased to 1/2-inch, then we would need a minimum of 31 holes per foot in the perforated pipe.

Depth of tile lines has been a subject of constant concern to many investigators. The intake of water by tile drains increases almost linearly with the depth to which they are laid. For example, if a 4-inch tile is laid to a depth of 2 feet, its drain flux or intake rate per day will be approximately 0.3 cu. ft. per ft. of drain; however, if the same tile is installed at a depth of 4 feet, the intake will increase to 0.4 cu. ft. per

day per foot of drain. In general, doubling the depth of tile in a pervious soil will almost double the intake rate.

In line with tile depth in relation to intake rate, we are concerned with tile spacings. Calculations by Kirkham indicate that for tile spacings greater than 20 feet, the intake rate of water by the drains is independent of the spacings. In other words, there would be twice as much water removed by 50-foot spacings as there will be by 100-foot spacings.

There would be twice the amount of tile in the field. Other workers have suggested a triangular nomograph method for tile spacing. It is based on knowing the moisture equivalent and rate of drop of ground water per day. As an example, we want to drop the water table 2 ft. per day on sandy soil having a moisture equivalent of 4, our tile spacings would be 200 feet.

This we know to be erroneous for our Florida flatwoods soils. The closer the spacings, the better water control we have. Spacing of tile lines is also determined by the hydraulic conductivity of the soil. When the conductivity is 0.80-2.50 inches per hour, the spacings may be 60-110, 80-145 and 100-180 feet, respectively, for tiles placed at 3, 4 and 5 foot depths.

Cost of Tile Drains

Many growers have been misinformed on the cost of materials, equipment and installation of drain tile. Best estimates by the author are that 4-inch tile on 80 foot spacings will cost from \$150 to \$225 per acre. When other spacings are to be desired, the costs on a per foot basis for 4-inch tile installed will be \$0.28-\$0.40 per foot of drain.

What does all this mean to the citrus grower who has a grove on flatwoods soil? First, he must plan irrigation on an accounting method. He must know the amount of water the soil holds per foot depth. Secondly, he must plan a controlled irrigation system, either sub-surface or portable, and supply the water requirements as previous research has shown is needed. (Citrus requires an average evapo transpiration of 0.15 inches water per day.)

In addition, he must supply an additional amount of water to take care of deep percolation losses. If a water table of 2-feet below ground surface is maintained, then piezometer tubes should be placed at random in the grove whereby daily checks on water table depths may be readily obtained. In extreme wet and dry periods, observations on water table depths in

lateral ditches are no indication of depth to water table in the grove.

By having a definite knowledge of the water holding capacity of the soil, daily water requirements of citrus, amount of percolation losses, and record of rainfall, a grower can irrigate by accounting rather than "by guess".

If sub-surface drainage and irrigation are used, the operating cost per acre-foot will be approximately \$0.20. This includes fuels, lubricants and minor maintenance for low-lift pumps and power units but no attendant labor. If attendant labor is used for pumps, the cost will double or be about \$0.40 per acre-foot.

Ditches have the advantage of low installation cost as compared to tile; however, land lost to ditches and their maintenance poses a problem of economic importance. While tile has promise and permanence, installation costs are high for a properly engineered system. Theoretical values of run-off calculated from tile are somewhat higher than actual run-off, due to silting and low lateral movement of soil water to the tile.

If Florida is to expand its citrus production to low flatwoods soils and maintain its national standing in the production, we must properly engineer our design of drainage systems so as to carry the water on or off the soil in the right amount, at the right time and at the lowest possible cost.

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SHADE TREE CARE

Lack of moisture is sometimes the reason for the poor condition of shade trees during summer months, according to T. G. Herndon, Extension farm forester.

"But," he adds, "an equally frequent cause of trouble is starvation." Elements most necessary for tree growth are nitrogen, phosphorus and potassium. These may be lacking in soils where shade trees are grown.

The result is an unhealthy color of the foliage, poor bud development, dying branches and poor growth of the tree in general.

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Should Oranges For Concentrate Be Initially Washed Before Or After Storage Bins?

D. I. MURDOCK¹,
CHARLES H. BROKAW¹
and J. F. FOLINAZZO²

In processing frozen citrus concentrate sanitation control starts when fruit is received at the plant. General practice is to unload fruit from trucks on to a conveyor system, grade for maturity and soundness, store in bins, wash, regrade and sanitize prior to entering the extractors. The efficiency of these operations has a direct bearing on the microbial population of the extracted juice. Of these processes, fruit washing is the most effective in removing soil and microorganisms from fruit surfaces. Customary practice of initially washing fruit after bin storage results in an accumulation of unsightly soil and debris on equipment prior to this operation, and often makes for inefficiency in initial grading due to soil particles adhering to fruit surfaces. If fruit washing occurred immediately after unloading, it not only would result in cleaner fruit and equipment before regular washing, but might also improve grading efficiency and reduce fruit surface contamination. However, storing fruit under moist conditions has been said to be more conducive to its physical breakdown.

In order to obtain factual information on this subject, an investigation was made by Minute Maid Corporation jointly with the Research Department of Continental Can Company to study the effect of an initial wash prior to bin storage on (1) microbial contamination of fruit surfaces, (2) fruit cleanliness, (3) grading efficiency, and (4) physical breakdown of fruit in bins.

Procedure

Fruit surface studies reported herein were made in accordance with the procedure described by D. I. Murdock, et al. (Florida State Horticultural Society Proceedings, November, 1953) (1). A slight deviation from the standard rinse test was employed to determine the number of microorganisms on fruit surfaces. In brief, a sample consisted of 10 oranges distributed equally in two sterile one-gallon pails, one of which contained 1000 ml. of sterile water. The pail

Delivered at Florida State Horticultural Society Meeting, Miami, Oct. 28-29, 1960

with water and oranges (containing a small amount of wetting agent) was placed on a mechanical shaker for three minutes. The rinse water was then transferred aseptically to the other pail which was shaken for a similar period. Final rinse water was then plated in the usual manner. Orange serum agar was used as the plating medium, and all plates were counted after 48 to 72 hours of incubation at 30°C (86°F.).

This study, except for the bacteriological phases, covered all fruit processed during the Valencia season at one concentrate plant. The number of microorganisms on fruit surfaces was determined over a 3-week period under fruit handling conditions believed to be typical. The oranges were sampled daily, from trucks as they were being unloaded, and from the various steps in handling fruit up to the extractors. During the test, the fruit washing procedure was alternated between washing prior to entering the bins (called "washed fruit"), and not washing prior to the bins (called "unwashed fruit"). Each period lasted 3 to 4 days, the time between plant clean-ups. Except for the single wash operation immediately after fruit unloading, the fruit washing procedure for both variables was conventional and remained constant throughout.

Fruit cleanliness evaluations were based on soil removed from oranges by the rinse water in preparation of the sample for plating. A Model 401 Lumetron equipped with a 420 mu. filter was used to determine the opti-

cal density (measured as percent light transmission) of this medium. A control or blank sample of water without oranges was carried through each analysis for plating and light transmission determination. The particle density remaining on a paper pad, through which rinse water had been filtered, was also employed as another method of evaluating fruit cleanliness.

Grading efficiency was measured over a 7-week period by comparing fruit culled to total fruit received. Culls removed as the fruit was unloaded ("fruit to bins") were weighed automatically and reported as boxes containing 90 pounds each. "Fruit to process" culls were determined by placing an electrically-operated counter on the cull conveyor belt after the final graders. The counter recorded each culled orange as it passed over the device. Culled fruit was converted to boxes by dividing the oranges counted by 200.

The fruit washer located before the bins consisted of a series of fan-type sprays installed over the roller bed of the trash eliminator (between sampling stations 1 and 2). The sprays operated at 90-100 pounds pressure and the water contained 4 to 10 ppm. of chlorine. After the bins, all fruit was sanitized by means of a brush washer, detergents and germicidal sprays containing chlorine at 20-30 ppm.

Results and Discussion

Fruit surface contamination for each handling operation from truck to extractor is presented for washed and unwashed fruit.

Statistical analysis of the data showed:

1. An initial wash operation significantly decreased bacterial count between stations 1 and 2, at the 5%

FRUIT CULLED BY GRADERS

TABLE 1

(Washed Fruit in Comparison with Unwashed Fruit)
FRUIT TO BINS FRUIT TO PROCESS

Unwashed			Washed			Unwashed			Washed		
Total			Total			Total			Total		
Boxes	Boxes	%	Boxes	Boxes	%	Boxes	Boxes	%	Boxes	Boxes	%
Rec'd	Culled	Culled	Rec'd	Culled	Culled	Rec'd	Culled	Culled	Rec'd	Culled	Culled
199,031	982	0.493	202,142	745	0.372	198,049	956	0.483	200,393	1,028	0.513

¹Quality Control Department, Minute Maid Corporation, Orlando, Florida.

²Metal Division, R & D Department, Continental Can Company, Inc., Chicago, Illinois.

reliability level. The decrease for unwashed fruit was not significant.

2. The increase in count between stations 2 and 4 was sizable in both procedures but was not significantly different. In other words, an initial wash did not materially reduce the count on the fruit leaving the bins.

3. The washed fruit counts from bins to extractors paralleled those of unwashed fruit, though the washed process gave consistently higher results. Surprisingly enough, the higher values were not found to be significant.

4. The variation in counts at each station up through station 4 during the test period was not significantly different between the washed and unwashed processes. The variation at stations 5-8 was not statistically analyzed but appears to be similar to the data for stations 1-4.

It was observed during the study that no physical breakdown or mold growth occurred on fruit which had received the initial wash and was stored in bins for periods up to 48 hours. The bins remained cleaner while storing washed fruit.

From visual observation unwashed fruit carried a heavier load of soil up through station 4. Commencing with station 5, soil was about equal between the two processes and remains fairly constant up to the point of extraction.

Data for washed and unwashed fruit are the average of 7 test runs. The higher transmission values indicate less opacity and, thus, less soil rinsed from the sample of oranges. Oranges sampled from the truck, whether subsequently washed or unwashed, showed almost identical Lumetron readings. This establishes that fruit used for the two processes was equal in initial soil load. The results also show that initially washed fruit is markedly cleaner up to the brush washer (station 5) than unwashed fruit, but only slightly cleaner from this point to the extractors.

In checking on the efficiency of the first grading operation, it was noted that more boxes were culled when unwashed fruit entered the bins (Table 1). One assumption might be that the graders discarded more sound oranges than unsound oranges when fruit was dirty than when it was clean. The final graders (fruit to process) showed no significant difference in number of boxes culled between washed and unwashed fruit. In the course of this investigation, it was observed that recording the number of culls after the final grading operation is an excellent method of checking grading efficiency. In this

59-60 Florida Citrus Season Drawing To Successful Close

The 1959-60 Florida citrus season is rapidly drawing to a close and will go down in statistical records as "one of the most successful seasons in the history of the industry", Robert W. Rutledge, Florida Citrus Mutual general manager, said recently.

Rutledge said that the industry got off to a rather slow start at the beginning of the season but that it picked up in December and has moved successfully ever since.

"Except for a brief period between the end of midseason oranges and

the start of Valencia oranges, prices have been favorable," Rutledge said.

For all practical purposes the 1959-60 Florida orange season will close within the next two to three weeks with approximately seven million boxes of oranges remaining for harvest, he said. The present orange crop is the second largest in the history of the industry.

"With little fruit remaining to move, packinghouses have been closing and will continue to close during the next 14 days," Rutledge said. "Presently there are 25 packinghouses operating."

Florida's remaining grapefruit will be shipped to the auction markets and is mostly from the Indian River area. Rutledge said that if the current U. S. Department of Agriculture's estimate is correct only 100,000 boxes of grapefruit remain to harvest.

"Fresh fruit volume is ahead of last year," he said. "Orange volume to date is 3 1/3 million boxes ahead while grapefruit shows only a slight gain which is good in view of the fact that the grapefruit crop is approximately five million boxes less than last year."

"Consumption of frozen orange concentrate this season has broken all previous records with prices for the finished product possibly going higher before the start of next season," Rutledge said. "This season's pack of concentrate will be slightly less than last year."

He said concentrate carry-over should be reasonable next Dec. 1 due to the heavy consumption expected in months ahead.

particular study a record was kept of the culls graded by each shift. It was noted that when the initial graders "fell down on the job," the final graders culled more fruit. Also, in one instance when the percentage of culls graded was exceptionally high it was found that the final graders were over grading. Keeping a record of these culls also gives a more accurate basis for figuring yields at the plant.

The data presented in this paper show that washing fruit prior to bin storage has no beneficial effect in reducing fruit surface contamination, but it does result in fruit handling equipment remaining in a more sanitary condition. This is especially true in the bins where soil and other debris ordinarily accumulate. The initial graders also stated that it was easier to grade washed rather than unwashed fruit.

Summary

Oranges washed prior to bin storage, in addition to regular sanitizing after bins, decreases surface contamination immediately after the initial wash operation. Otherwise, initially washed fruit was not significantly different in contamination from the regular fruit handling procedure. Washed fruit is cleaner from standpoint of surface soil up to point of final brush washer; bins and fruit handling equipment remain cleaner and no physical breakdown of fruit occurred. Graders preferred washed fruit but culled more oranges entering bins when they were unwashed. Final graders culled from each process equally.

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Let me give you a tip, boys. You'll make money easier and faster buying U.S. Savings Bonds. They now pay 3 3/4 % you know.

Consumer Purchases of Selected Fruits And Juices, January 1960

The data in this report represent estimated total purchases by household customers only and do not include those by hotels, restaurants, hospitals, or other institutional outlets. Data for single months are for 4-week periods (28 days) to permit comparisons between periods of equal length.

SUMMARY

Household purchases of fresh oranges and frozen concentrated orange juice in January 1960 were the largest reported in more than 2 years. Purchases of canned orange juice jumped over the million-case mark for the first time in many months, and buying of canned orange drink was the heaviest reported for January. Purchases of chilled orange juice, however, continued to lag behind year-earlier levels.

Fresh grapefruit and canned grapefruit juice were bought in moderately greater quantity than in January, 1959, but pineapple-grapefruit drink was purchased in smaller volume. Pineapple juice, tomato juice, and miscellaneous canned juices also fell off in volume. On the other hand, purchases of prune juice were the largest reported in 2 years.

Retail prices for fresh oranges and grapefruit were higher in January 1960 than a year earlier, in contrast to a decline in prices paid for the reported juices and drinks. The price declines were small in relation to purchase increases, and, consequently, consumer expenditures for selected fruits and juices were greater than in January 1959.

FROZEN AND CHILLED JUICES

The retail price of frozen concentrated orange juice dropped 1.2 cents in January 1960 from December, and household purchases jumped to 5.7 million gallons. Prices at 18.2 cents per 6-ounce can were the lowest in 2 years.

The volume of purchases, which approached the high levels of 1957, was 31 percent greater than in January 1959 and 12 percent greater than the 1954-56 (pre-freeze) average for the month. (1) Purchases per buying family at 7.5 cans were up 9 percent from a year earlier, and the 30 percent of the nation's families that bought represented a gain of more than 4 percentage points.

The proportion of families buying

... By ...

CLIVE E. JOHNSON
Market Development Research
Div. Agricultural Market-
ing Service

was within 2 points of July 1955 when the proportion was the highest reported for any month. The average buying family spent \$1.36 for concentrate in January, compared with an expenditure of \$1.51 a year earlier when prices averaged 22 cents per can. With more families buying, however, total expenditures for the month were up 9 percent to about \$22 million.

Purchases of miscellaneous frozen concentrated juices increased sharply over the low December level, to almost equal the January 1959 volume. These products were retailed at an average price of 18.9 cents per 6-ounce can, 0.8 cent less than a year earlier.

Household purchases of chilled orange juice continued to lag 10 percent below levels of a year earlier. Total purchase volume for the season, beginning with October 1959, was off about 13 percent from the corresponding 4-month period of 1958-59. The 4 percent of the nation's families that bought and the average buying family's purchase of 3.4 quarts were both smaller than in January 1959. Retail prices averaged 40.2 cents per quart, 1 cent less than a year earlier.

ORANGE JUICE CLIMBS

Prices paid for canned orange juice dropped 4 cents per can in January 1960, and household purchases rose substantially to exceed a million cases for the first time since autumn 1958. The 29-percent gain in volume over a year earlier was generated by a substantial increase in the size of purchase per buying family, along with a moderate increase in the proportion of families buying.

With prices at 36.7 cents per 46-ounce can, the average buying family spent 81 cents for canned orange juice in January, and expenditures totaled about \$3.5 million for the month. A year earlier when prices were 41.6 cents, the average buying family expenditure was 77 cents, and the total expenditure was about \$3.1 million.

GRAPEFRUIT JUICE GAINS

Retail sales of canned grapefruit juice were 10 percent greater than the low January 1959 volume. Cumulative purchases for the season through January were about the same as in the corresponding 4 months of 1958-59, but were substantially lower than in earlier years. Buying family purchases averaged two 46-ounce cans in January, 8 percent more than a year earlier, and the proportion of families buying increased to a little more than 6 percent. Retail prices, firm at 31.9 cents per can, were 2.6 cents less than in January 1959.

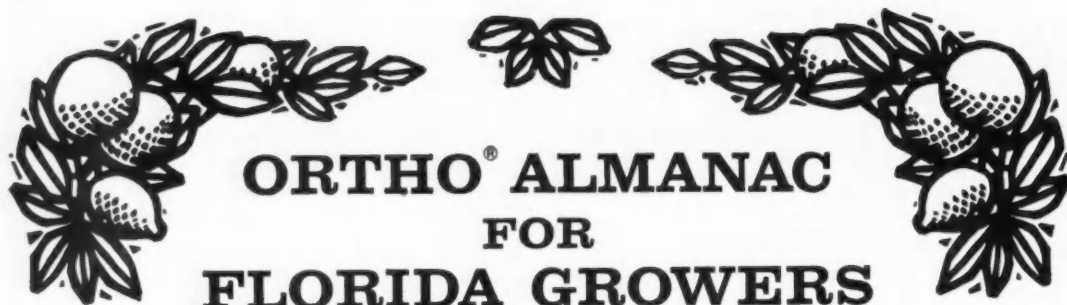
Buying of pineapple juice for home use in January 1960 remained moderately below the level of a year earlier. The million cases bought reflected an average purchase of 1.8 46-ounce cans for about 10 percent of the nation's families, a decline in both the proportion of families buying and in the size of purchase. The product was retailed at an average of 31.1 cents per 46-ounce can, 0.8 cent less than in January 1959.

Retail sales of prune juice gathered momentum in January, and for the first time in about a year the volume equaled the 1954-56 average for the month. The 622,000 cases bought, up 9 percent from January 1959, was the largest volume reported since mid-1958. The gain over a year earlier was associated with an increase in the size of the average family's purchase to 2.2 quarts. About 7 percent of U. S. families bought the product. An average of 43.2 cents was paid per quart bottle, 1.2 cents more than in the preceding January. At these prices, consuming family expenditures averaged 97 cents, or 6 cents more than in the preceding January. Total consumer expenditures were 12 percent greater than a year earlier.

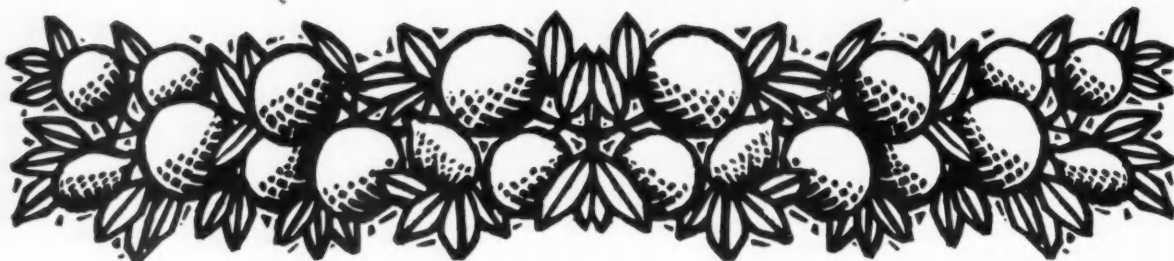
Retail purchases of tomato juice at about 1.9 million cases were 3 percent below the high January 1959 level. On a buying family basis, purchases averaged 1.9 46-ounce cans, and 18 percent of the nation's families bought. Retailers charged consumers an average of 27.5 cents per can, 1 cent less than a year earlier.

January purchases of miscellaneous single-strength juices totaled about 1.4 million cases, a 10-percent reduction from the January 1959 volume. About 17 percent of U. S. families

(Continued on Page 11)



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CHARLES ASHLEY

Received his B.S. in entomology from Auburn. Worked three years citrus spraying and two years as a laboratory assistant before joining Calspray. Resides in Leesburg, phone ST 7-2063.



WEBSTER CARSON

Joined Calspray in 1956 after receiving his B.S. degree in agriculture from University of Florida. Resides in Plant City—contact him by calling 3-8351.



JEAN MABRY

Served as an entomologist for two years with the U.S. Army before joining Calspray in 1955. Received his degree in agriculture from U. of Florida. Jean resides in Lakeland. Call MU 6-4515.



J. S. MURPHY

Received his degree in agriculture from University of Florida. Before joining Calspray in 1955, worked at Citrus Experiment Station. Resides in Lake Alfred, phone FR 2-1422.



JOHN NOWELL

Received his B.S. degree in agriculture from University of Florida. Joined Calspray in 1955. John lives in Orlando. Reach him at Garden 4-6754.



RANDALL WILLIAMS

Randy sold livestock and poultry feeds before joining Calspray in 1957. Received his degree in agriculture from University of Florida. Resides in Deland. Reach him by calling RE 4-0599.



Consumer Purchases Of Selected Fruits and Juices— January, 1960

(Continued from Page 9)

bought these products, and the average family purchase was 1.5 46-ounce cans. Retail prices averaged 37.1 cents per can.

TOTAL CANNED JUICES HOLD AT YEAR EARLIER LEVEL

In total, consumers bought 6.6 million cases of canned single-strength juices in January 1960, about the same as a year earlier. Purchases averaged 2.6 46-ounce cans for families buying; about 45 percent of the nation's families bought 1 or more single-strength juices during the month.

ORANGE DRINK CLIMBS TO NEW JANUARY PEAK

Household buying of canned orange drink increased sharply over the low December volume, and January 1960 purchases of 466,000 cases were the largest yet reported for the month. Buying averaged 2.4 46-ounce cans for the 3 percent of the nation's families that bought. The average price of 30 cents per 46-ounce can was 0.6 cent less than a year earlier.

Pineapple-grapefruit drink jumped to about 1 million cases in January to bring the comparatively low purchase rates that have persisted since September to within 6 percent of the January 1959 level. In the 3 preceding months, purchases were 17 to 29 percent below the corresponding month of a year earlier. Buying family purchases held at the 2.1 46-ounce cans of January 1959, but a smaller proportion of families bought. Prices charged consumers averaged 29.9 cents per can, 0.4 cent less than a year earlier.

About 1.2 million cases of miscellaneous fruit drinks were bought for home use in January 1960. The volume of purchases has been about the same during the 4 months that data are available for these items. About 10 percent of the nation's families bought miscellaneous fruit drinks in January, and the average purchase was 2.2 46-ounce cans. Retail prices were 35.8 cents per can.

FRESH ORANGES AT 4-YEAR JANUARY PEAK

Purchases of fresh oranges for home use totaled 2.8 million boxes in January, 9 percent more than a year earlier and the largest January volume since 1956. The fruit retailed at 45.9 cents per dozen, 1.3 cents more than in the preceding January, and 6 cents more than the pre-freeze average for the month. About 43 percent of the nation's families bought oranges, a gain of more than 1 per-

centage point over a year earlier. These families averaged 2-1/3 dozen oranges, the same as in January 1959.

The indicated orange crop for 1959-60 is larger than that for preceding years. However, as substantially greater quantities have been utilized for fresh sales and for processing, fewer oranges were left for marketing than at the end of January 1959.

GRAPEFRUIT ABOVE 1954-56

Retail purchases of fresh grapefruit were up 7 percent from January 1959 to about 2.3 million boxes. This is the largest January volume since 1955. About 29 percent of the nation's families bought, purchasing 11 grapefruit per family. Retail prices at 83.9 cents per dozen were 0.3 cent higher than a year earlier.

Production of grapefruit is indicated to be down from 1958-59. Use of the fruit for processing was moderately ahead of this time a year earlier, and movement to the fresh market was substantially greater. As a result, the quantity of grapefruit to be marketed at the end of January -960 was considerably smaller than a year earlier.

GRAPEFRUIT SECTIONS DOWN

The 210,000 cases of grapefruit sections bought for household use in January 1960 represented an 8-percent decline from the corresponding month of the preceding year. Purchases for the 4 months of the current season, October 1959-January 1960, are well below those in the same period of earlier years. The low volume in comparison with January 1959 was associated with a drop in the proportion of families buying. Part of that loss, however, was offset by a larger size of purchase. The average price paid of 20.2 cents per No. 303 can was 0.8 cent less than in January 1959.

Retail sales of fresh tangerines in January 1960 were well below those of a year earlier. The 1959-60 crop was substantially smaller than that of the preceding season, and marketing of the crop was about completed. Prices paid for tangerines averaged 44.6 cents per dozen, compared with 37.9 cents in January 1959.

HARDIE Duo-Fan



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The Season's Report of Federal-State Frost Warning Service

SCOPE OF SERVICE

The U. S. Weather Bureau, Department of Commerce, in cooperation with the Agricultural Experiment Stations of the University of Florida operates the Federal-State Frost Warning Service for all of peninsular Florida. This service has now completed its 25th year of operation, a weather service for the benefit of agriculture.

CHARACTER OF THE 1959-60

SEASON

The 1959-60 winter season was a very trying and disastrous one for the growers of tender crops in peninsular Florida. Excessive rains in September, October and November flooded many of the fields in central and southern Florida, causing rather heavy losses and retarding growth and delaying planting of many fields.

Then the rains in mid-March which ranged from 10 to near 20 inches in some areas of central Florida, five to 12 inches in north Florida, caused additional damage by flooding. Vegetables, flowers and ornamentals were plagued by frequent cold weather with frosts from November 30 to as late as March 23.

The weather for citrus was generally favorable, however below freezing temperatures occurred nightly from January 20 through the 25th, which caused some damage to tender citrus growth and fruit in most all areas of the state in unprotected colder groves. Unprotected young trees in the colder locations received rather severe damage by the January cold after minor damage from the below freezing temperatures on November 30.

Rainfall was generally ample in most citrus areas, however, flooding by excessive rains at the beginning of the season and in mid-March damaged some trees.

November had the first frost of the season which was confined to the extreme north on the 10th. Light frost, mostly scattered, occurred in north and central districts on the 26th. The coldest weather of the month was experienced on the 30th. Temperatures were as low as 20 to 30°, generally, in north and central Florida and below freezing temperatures and frost extended into most of the backlands of the Everglades area, including the Immokalee section.

Damage to unprotected tender

WARREN O. JOHNSON
Meteorologist In Charge
DONALD C. RUSSELL AND
LESTER L. BENSON
Meteorologists
Season of 1959-1960

crops was generally heavy southward to the Everglades. Citrus damage was confined to the colder locations. Excessive rains retarded planting and developing of crops in the southern portions of the state.

December temperatures generally averaged below normal throughout the state. The only severe cold, mostly confined to the northern portion of the state, was on December 8 and 9. Temperatures were 20 to 30° as far south as the Orlando and the north portion of the Brooksville District and 26 to 34° in the central areas and 33 to 40° in the Everglades on the 8th. On the 9th, temperatures were just slightly below freezing in the northern sector of the area. Plant growth was rather slow due to the rather cool month. Rainfall was light but generally adequate.

January had rather warm weather for the first 18 days of the month. This was abruptly changed by the passing of a cold front on the morning of the 19th, after which followed the coldest period of the season. Freezing temperatures and below were nightly occurrences from January 20 through the 25th, extending into most areas of the state.

The coldest of these nights was January 23-24, with below freezing temperatures extending southward to the Lower East Coast . . . temperatures in low 20s in the north, 20-32° central, 25-31° in the Everglades and 28-33° on the Lower East Coast. Some stations in the Everglades and Lower East Coast had temperatures freezing or below for as long as 9 to 12

hours. All unprotected tender crops throughout the entire peninsula were severely damaged, while damage to citrus was confined to unprotected young trees, tender growth and some fruit in the colder locations. Rainfall for the month was generally light.

February was cold and wet throughout all the growing areas and reduced production of most crops. Fifteen nights experienced temperatures in the mid-30s and below in some areas of the state. The coldest mornings were February 15 and 20 when temperatures in the low 20s occurred in the northern part of the state with frost and freezing temperatures extending into the backlands of the Everglades, and light frost on the Lower East Coast. Light scattered frosts also occurred in the Everglades and Lower East Coast on February 9. Extensive damage occurred to unprotected seed beds and newly planted spring crops, including potatoes, in the northern portion of the state and to tender crops in the backlands of the Everglades and central Florida.

March weather was a continuation of February's cold, wet weather with frequent nights with frost and near freezing temperatures in the north and central portions of the state from the 4th through the 14th and again on the 22nd. The Everglades area experienced frost on the 5th, 6th, 22nd and 23rd. There was some spotted light frost on the Lower East Coast on the latter date.

Unprotected crops suffered rather severe damage in scattered locations except the Lower East Coast and some replanting was again necessary in many areas. It was not enough that the cold weather plagued the growers, but excessive rains, confined generally to the central portions of the state caused heavy damage by flooding and excessive soil moisture in north and central areas.

By the end of the season citrus was

TABLE 1
Summary data for each of the ten forecast districts for the 1959-60 season.

	Nights at & below 30° 32°		F I R S T 32° 26°		L A S T 26° 32°		Min.	Date
Gainesville	56	39	Nov. 26	Nov. 29	Mar. 22	Apr. 11	15.0°	Jan. 24
Upper East Coast	43	31	Nov. 29	Nov. 30	Mar. 22	Mar. 22	20.0°	Jan. 24
Orlando	36	22	Nov. 29	Nov. 30	Mar. 22	Mar. 22	18.6°	Jan. 24
Brooksville	35	22	Nov. 29	Nov. 30	Mar. 22	Mar. 22	19.0°	Jan. 24
Ridge	32	16	Nov. 30	Nov. 30	Mar. 5	Mar. 22	19.1°	Jan. 24
Bartow	25	12	Nov. 30	Nov. 30	Feb. 15	Mar. 22	22.0°	Jan. 24
West Coast	22	12	Nov. 30	Nov. 30	Jan. 24	Mar. 22	22.1°	Jan. 24
Indian River	22	11	Nov. 30	Jan. 22	Jan. 25	Mar. 5	23.5°	Jan. 24
Everglades	21	13	Nov. 30	Jan. 22	Jan. 24	Mar. 23	23.0°	Jan. 24
Lower East Coast	13	4	Jan. 22	Jan. 22	Jan. 24	Mar. 23	26.1°	Jan. 24

in excellent condition and a heavy bloom was set in most groves by the first of April. Crops made good growth by early April, however scattered frost, mostly light and confined to the colder locations of the northern portions of the state and isolated mucklands in central Florida occurred on the morning of April 11. Damage was rather spotted and even though some tender crops were killed, the overall loss was insignificant.

Accurate and timely forecasts and warnings with widespread distribution were invaluable to growers

nominal CND telegraph charge. Some growers had special messages sent directly to them collect from the Lakeland office whenever critical weather was predicted for their holdings.

Weather broadcasts were made by meteorologists from the Lakeland office over WFLA and WNN, Lakeland; WFLA, Plant City and WPC, Lake Wales.

HOW TO USE THE FORECASTS

For the benefit of growers who use our forecasts as a guide in frost protection operations, we find it neces-

colder) their own property may be than the cold, low ground locations for which the forecasts are issued. In the first part of the bulletin a statement is made as to how much difference may be expected between high and low ground locations in the various districts.

The amount may be very small on windy nights, or may be 10 degrees or more on calm, clear nights. Moderately high ground would, naturally, be somewhat less. After making comparisons for a period of time, it should be easy for the individual property owner to adapt the forecasts to his own property. For example, the temperature forecast for low ground in an area is 24 to 27° and high ground is to be 8 degrees warmer. It can readily be ascertained that the temperature expected for high ground groves will be 32 to 35°.

SEASONAL RAINFALL — 1959-60

	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Total
North:							
Daytona Beach	7.12	4.26	2.26	1.16	9.13	7.52	31.45
Gainesville	5.65	1.69	.84	2.51	3.76	7.48	21.93
Glen St. Mary	5.46	2.98	1.24	2.92	6.62	7.92	27.14
Ocala 2 NE	4.01	.74	1.35	1.60	4.78	11.34	23.82
Palatka	4.61	1.07	1.01	1.77	3.98	10.09	22.53
Central:							
Arcadia	8.26	2.65	1.96	.86	4.92	4.50	23.15
Avon Park	11.26	1.73	2.47	.55	6.54	5.52	28.07
Bradenton	7.81	1.80	2.65	1.51	5.44	4.62	23.83
Brooksville	5.32	1.10	2.21	1.67	5.18	17.70	33.18
Ft. Pierce	11.41	3.78	2.92	.19	6.14	3.93	28.37
Lakeland	6.63	.93	1.71	1.24	4.01	12.94	27.46
Orlando AP	5.97	.99	1.37	1.49	5.64	10.54	26.00
Tampa	6.26	1.02	2.25	1.32	3.70	11.00	25.55
Titusville	6.10	2.69	2.11	1.19	3.63	7.79	23.51
South:							
Belle Glade	9.35	8.16	.47	.11	2.81	1.99	22.89
Ft. Lauderdale	6.45	10.95	2.75	.30	2.30	1.10	23.85
Ft. Myers	12.04	1.92	1.79	.46	3.66	1.87	21.74
Homestead	13.04	9.72	1.23	.20	1.84	.64	26.67
LaBelle	7.69	1.32	1.07	.49	4.09	1.52	16.18
Miles Ctiy	17.25	2.27	.60	.56	2.25	3.75	26.68

throughout the peninsula during the season. Truck growers realized considerable savings from advance warnings by forced harvesting of crops and by taking protective measures against frost and freezing temperatures. Due to advance warnings of heavy rains, growers started drainage pumps early, saving many fields from loss by flooding.

Protection of citrus, including nursery stock, paid large dividends, although protection was necessary on only a few cold nights, yet these were killing freezes for these crops in some locations. Unnecessary standing by with protection crews was also avoided by accurate forecasts for threatening cold nights. There were 57 cold nights this season compared to the average of 48.

DISTRIBUTION OF FORECASTS

The press wire services disseminated the forecast bulletins promptly to all newspapers and radio and TV stations, which broadcast the bulletins on a regular schedule. Schedules of broadcast and forecast district map were published and distributed to growers and appeared in Florida Citrus Mutual's "Triangle" and in other grower publications.

Numerous growers made arrangements with their local Western Union office to have the twice-daily forecast bulletin delivered to them for the

sary to locate our forecast stations in the colder, low ground locations.

If we selected warmer, high ground locations we would be forced to issue "no danger" forecasts on many nights when damaging temperature would be experienced in the lowlands. There is usually considerable difference in temperature between high and low ground.

It is impossible to name a single definite temperature that will fit all groves in a locality. Growers may adapt our forecasts to their own location by keeping records for a period of time and then comparing them with those from a nearby forecast station.

Then it is easy to estimate how much warmer (or in rare instances


TEST SHOWS CONSUMERS APPROVE PULP-FORTIFIED RED GRAPEFRUIT JUICE

Canned grapefruit juice from the red variety of fruit is acceptable to consumers when fortified with pulp to maintain its color, a marketing research report issued by the U. S. Department of Agriculture indicates.

Canned juice from the red variety sometimes becomes discolored when unfortified. USDA's Agricultural Research Service has developed a method of fortifying this juice with pulp from the fruit, preventing discoloration.

The Market Development Research Division of USDA's Agricultural Marketing Service now has completed a test of consumer acceptance of the new product, using a panel of 192 families.

The researchers concluded that fortified juice from red fruit is at no serious disadvantage, in comparison with juice from white fruit. Fortification of juice may provide an additional market outlet for growers of red grapefruit, reduce waste, increase yield of juice from fruit by as much as 7 percent.




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Industry Control Programs For Grapefruit

(Concluded From Last Issue)

Discrimination between market areas is also impractical when supplies of the product move freely between different markets. The grapefruit industry cannot control all handlers in the marketing channels. If the industry attempted to charge different prices for grapefruit in different market areas, some handlers would buy in the low price market and ship the fruit to the high priced market. This would continue until prices in the several markets differed only by the amount of transportation and handling costs.

Controlled allocation of the crop throughout the season would be one possible way to increase industry revenue provided more was known about seasonal demand. This approach would likely prove to be unsatisfactory however, unless equitable shipping arrangements could be devised for all growers.

What is possibly the most important type of control the industry could practice is the allocation of the crop between fresh and processed uses. For a given crop, largest gross returns to growers would be realized when the marginal revenue from sales to fresh fruit shippers, single strength juice processors and concentrators were equal. Notice that the allocation would be made on the basis of marginal revenues from sales to shippers and processors, not at the retail level. Although allocation of the crop between the three products on the basis of marginal revenues at the retail level would likely improve returns, it would be accidental indeed if it resulted in the best returns to growers. This is true because the demands for grapefruit in its various forms differ at the retail level, and different costs are incurred in getting the products to consumers.

Considerable knowledge of the shipper and processor demand for grapefruit would be required for this type of program to be successfully undertaken. Furthermore, the industry would be faced with the problem of working out an equitable selling system for the growers. One way of accomplishing this would be

to determine the proportions of fruit that a grower could sell to each outlet on the basis of his historical sales to these outlets. Another possible way would be to organize his selling pattern on the basis of his historical production of different varieties and types of fruit. Regardless of the system chosen, certain inequities would be bound to arise although they would be less under some system than others.

Now that several methods of affecting returns by allocating a given supply have been examined, it would be well to investigate the policy of restricting the total supply. Supply restriction may be accomplished through production controls, marketing controls or a combination of the two.

Under production controls, either the number of acres of grove could be limited to each grower, or growers could be assigned a production quota. With a production quota the grower could produce as much fruit as he desired but only the production quota allotted him could be sold. He could, however, sell this amount in any way he saw fit.

In a sense, the assignment of production quotas is a form of marketing control, yet its effect on growers is considerably different from that of the most common types of marketing controls. With an assigned production quota, the grower would know what to expect in advance and could plan his production activities accordingly.

Usually under a marketing control program, the grower can produce without hindrance but the amount he is permitted to sell is limited on the basis of quality, size or some other characteristic of the product. The crop is produced without the grower knowing in advance how much he will be allowed to sell.

A simple example will illustrate the different short-run effect of marketing control based on quality and a production quota program. Suppose a grower produced 10,000 boxes of grapefruit in a given season at an out-of-pocket cost alone of \$5,000. His average out-of-pocket cost would be 50c per box. Assume further that the industry

through quality regulation limited the amount of salable fruit so that the market price of grapefruit was 90c per box. If because of the quality regulation the grower could sell only half of his fruit, he would lose money.

In his case it cost \$5,000 to produce 5,000 boxes of salable fruit, or \$1 per box. If the grower had been assigned a production allotment of 5,000 boxes, he would have had the privilege of producing and selling this amount or less. To be sure, his cost of producing 5,000 boxes or less probably would have been higher than 50c per box. But the price could also have been considerably less than 90c per box and he would have still realized some return. The price, however, need not necessarily be much below 90c because the supply going to market would be limited by the production quotas.

A grower may be relatively efficient under one type of program and inefficient under another. Therefore, his ability to remain in business may depend upon the type of program adopted. Those who were inefficient producers under a given program would be gradually pushed out of business and only those favored by the program would remain.

In the long run the effectiveness of programs relying upon supply restriction would be diminished unless steps were taken to prevent expansion of production by current members and the entry of new producers.

Supply restriction may also have a detrimental effect upon the long-run demand for the product. An excessively high price for a product will cause consumers to turn to substitute commodities and encourage the production of new substitutes. Furthermore, restricting the supply of the product in one producing area would encourage an expansion of production in other producing areas. A reduction in the sales of Florida grapefruit to raise the price would be tantamount to holding an umbrella over Texas producers.

(Continued on Page 17)

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- **increases grove vigor**—disease control means better foliage, good new growth and higher yields
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GOVERNOR INVITES MANY TO INT'L. APPLE CONVENTION IN MIAMI JULY 25-27

Florida's nationally known super-salesman, Governor LeRoy Collins, has joined Florida's fruit and vegetable industry in a special invitation to hundreds of the nation's fruit and produce suppliers and buyers to attend the International Apple Association's 66th Annual Convention in Miami July 25-27th.

In a personal letter directed to more than 400 members of the IAA and top executives of the nation's leading retail grocery firm, Governor Collins pledged that in Florida conventioners would "find here the true hospitality of the South in a cosmopolitan city of many attractions".

The Governor also paid tribute to the International Apple Association, calling that organization's service to agriculture "outstanding". He said the membership of the IAA is truly reflective of the spirit that has made our nation's food products the finest and most abundant in the world.

Governor Collins suggested that conventioners might want to plan extra time in the Sunshine State in order to take advantage of the numerous tourist attractions that abound in Florida.

"We are delighted to host the annual meeting of the International Apple Association", Governor Collins said.

The Convention will be held at the Fontainebleau Hotel on Miami Beach, and will list an active agenda of social-business activities including a "Florida Breakfast" co-sponsored by the Florida Citrus Commission and Florida Citrus Mutual.

IAA officials have reported heavy advance registration for the Convention, and predict that the association's first Florida convention will be among the finest ever held.

FLORIDA ECONOMIST GETS USDA CITATION

A United States Department of Agriculture economist attached to the University of Florida has received one of 11 Agricultural Marketing Service performance awards for 1960.

Dr. George L. Capel, assistant agricultural economist with the Florida Agricultural Experiment Station, received the citation from Dr. Kenneth Ogren, head of the USDA Marketing Economics Research Division.

The employee awards are based on publications and research capabilities.

Dr. Capel received his doctorate from the University of Florida where he has been assigned since 1955. He



James H. Ellis

Recently presented the Florida Citrus Mutual award, as the outstanding citrus student in Florida Southern College.

The occasion was when young Ellis received his bachelor of science degree at Florida Southern on May 30. Selection of those to whom this honor is granted each year is made on the basis of outstanding work in the study of citrus. Each winner is awarded a plaque as evidence of his achievement.

Ellis, who graduated from Bartow high school in 1953 is a member of the Florida Academy of Sciences, the State Horticultural Society and the Polk County Farm Bureau. He was president of the Citrus Club at Southern College during his senior year.

He served in the Army for 3 years, including a stretch in Korea, after graduating from high school. Wm. R. Lyle, director of the citrus department at the college paid tribute to him by saying, he demonstrated qualities of leadership, and his genuine interest in and knowledge of citrus makes it most probable that he will have a most successful career in his chosen field.

Ellis will join the staff of Lake Garfield Citrus Growers Co-operative in which firm his two uncles, Joe P. and Hal Ellis, have been important factors over a long period of years.

earned BS and M Sdegrees from North Carolina State College. He worked with the Farm Credit Administration before joining the Agricultural Marketing Service.

CONNER RETIRES AS MUTUAL'S PRESIDENT AFTER SERVING OVER 4½ YEARS

Vernon L. Conner of Mt. Dora made his final public appearance as president of Florida Citrus Mutual at Mutual's 12th Annual Membership Meeting in Winter Haven June 21. Under Mutual's by-laws Conner was not eligible for re-election.

Conner has served as Mutual president for four and one-half years, longer than any other person. He was originally named in January of 1956 to succeed the late Perry Murray of Frostproof.

Conner was active in the initial organization of Mutual and has served on the board of directors since the 1949-50 season. He was re-elected to Mutual's 1960-61 board in balloting held in citrus producing districts in May and June.

Conner was also recently appointed a member of the Florida Citrus Commission by Governor Collins.

At the board's May meeting, directors unanimously voted to send Mr. and Mrs. Conner on a European citrus tour in appreciation for the services Conner has rendered Mutual and the citrus industry.

FF&V ASSN. TO PARTICIPATE IN APPLE CONVENTION IN MIAMI BEACH

Members of Florida Fruit & Vegetable Association who grow, ship and process the sunshine state's vegetables and tropical fruits, will help put the spotlight of publicity on apples next month by participating in the 66th Annual Convention of the International Apple Association in Miami Beach.

The Association does not, of course, include any commercial apple growers in its membership, but its members regularly transact their business with the same retailers, wholesalers and other produce handlers as do the nation's apple growers.

A general invitation has been issued to all trade factors and more than 1,500 people are expected to attend the convention at the Fontainebleau Hotel, July 25-27. It will mark the first time that this meeting has ever been held in Florida.

The gathering this year will be "the greatest concentration of fresh fruit and vegetable producers, packers, shippers and trade factors" in the history of the industry, according to General Chairman Fred S. Johnston.

A Welcoming Social Hour on July 24 is being sponsored by the Florida Fruit & Vegetable Association.



This little girl, Juliana Pope, daughter of a former Florida Citrus Queen, knows that Florida grapefruit carry a lot of Vitamin C and nutrition, and willingly posed for this picture which was circulated to hundreds of United States and Canadian papers, as well as foreign publications. Released by Florida Cypress Gardens in the belief that tourism and citrus are closely allied in the general economy of the state, actual clippings indicate that upwards of 15 million persons saw the photograph. This is but one of a series of pictures, with a Florida citrus motif, that has been distributed by Florida Cypress Gardens' press department without cost to the citrus industry.

Quality Control Program For Grapefruit

(Continued from Page 14)

Even without these limitations, a policy of supply restriction to increase price might not be the best course of action for the industry to pursue. If a large reduction in the marketed supply resulted in only a slight increase in price, total revenue from sales would be less than if the entire supply had been sold. In other words, if the demand for the product is elastic, a reduction in the quantity sold will reduce total receipts. The demand for a product must be inelastic before a reduction in supply will increase price sufficiently to raise total receipts. Even if the demand were inelastic, the increased revenue brought about

by reducing the supply may not be enough to cover the costs of the program to the industry.

Among the currently popular suggestions for alleviating the industry's difficulty is the proposal to develop an export program. Careful reflection

will show, however, that this is merely a special case of market discrimination. The general idea is to increase sales in the export market and decrease sales in the domestic market so as to raise the domestic price. At present, the government pays a subsidy to exporters who sell fruit in the foreign market. The subsidy plus the foreign price represents the price that exporters receive. Therefore, they will buy more fruit to ship abroad with a subsidy than without it. The more fruit exporters ship abroad, the less will be the remaining domestic supply and the higher the domestic price.

Without a subsidy to rely upon, the industry would need to devise a marketing control program in order to effectively discriminate between the two markets. As was pointed out previously, controlled marketing would be required in order to obtain an optimum allocation of the supply between the two markets. This might be accomplished through a marketing pool formed by all growers. Yet, here again, the problem of equitable treatment for all growers rears its ugly head. Furthermore, much more should be known about the nature of the domestic and foreign demand before the best results could be obtained.

By this time it should be apparent that a staggering number of factors must be considered before one can unequivocally state that a particular program will provide optimum benefit to the industry. Although a prudently planned and executed program might benefit the industry, the task of devising the ideal program is extremely difficult indeed.

Dr. Wallace R. Roy, Vice President of Minute Maid Corporation's Technical Services Division, has been elected chairman of the Refrigerated and Frozen Products Research Advisory Committee.

SOUTHERN DOLOMITE

PALMETTO, FLORIDA

PHONE: BRADENTON 2-1411

Summary of Papers Presented At Soil Science Foundation Meeting

Ledley H. Wear, treasurer, and a director of Soil Science Foundation, in his report, said that this is the only association of farmers and citrus growers in the State that has the scientific equipment, trained personnel and proven procedures for solving on the spot soil and fertilizer problems of individual growers. He said that it operates for its members on a low cost non-profit basis, and that this scientific approach eliminated most of the guesswork in fertilizer recommendations. He pointed out that the Foundation has a record of over 20 years service to the farmers and fruitmen of Florida.

Dr. Clifford N. Nolan, assistant technical director, reported from a series of studies on potash leaching. The results from these studies indicated that the following practices help reduce leaching losses of potash from sandy soils: (1) maintain soil pH from 6.0 to 6.5 through judicious use of lime and dolomite, (2) maintain a cover crop on the soil as continuously as possible, (3) broadcast application of potash on sands is less leachable than band or concentrated application, (4) potassium carbonates or potassium phosphates on acid sandy soils are less leachable than muriate or sulfate of potash.

Robert S. Johnson, chemist, reported that a series of studies over a six year period showed that the losses of calcium from Lakeland sand were less when the soil pH was maintained around 6.0 by the use of dolomite at the rate of one ton per acre per year. When the rate of dolomite was increased from one to three tons per acre per year, the losses of calcium from the soil increased in proportion to the rate of application.

Summary of the Results From the Short and Shandy Research Groves

The Short Research Grove is owned by the Foundation and has been under continuous studies since 1943. The following results appear to be justified:

1. The most efficient utilization of nitrogen fertilizer and production of Pineapple oranges on Lakeland sand occurs with .35 lb. nitrogen per box of fruit. Rates above .5 lb. nitrogen per box tend to retard tree growth and production without visible symp-



DR. O. C. BRYAN
Technical Director
Soil Science Foundation
Lakeland, Florida

toms of excess fertilizers.

2. The efficiency of trace elements such as copper and zinc is markedly higher in soils with a balanced nutrient program void of excesses.

3. Excessive amounts of lime aggravate zinc deficiency patterns in the leaves. These deficiency patterns have been successfully corrected by both soil and spray applications of soluble zinc.

4. Periodic applications of superphosphate have continued to produce higher yields than the same amounts applied three times a year in the fertilizer. All other factors were constant.

5. Basic Slag as a source of phosphorus is still producing above the average yield compared to equal amounts of phosphorus from superphosphate. This occurred when both treatments received all of the trace minerals as well as dolomite.

6. Over a period of 15 years the nitrogen-potash ratio of one to one has proven to be ample for potash needs of Pineapple oranges on Lakeland sand.

The Shandy Grove has been under continuous study for a period of six years in cooperation with Lake Garfield Nurseries Company. In this case the rates and time of application of fertilizer were studied. All of the

factors were constant. These records may be summarized as follows:

1. The rates of fertilizer per box of fruit for Valencias on Lakeland sand approximate those for the Pineapple oranges on Lakeland sand in the Short Research Grove in that more than .4 lb. nitrogen per box of fruit does not seem to be justified.

2. Supplemental nitrogen in February and August has not shown any significant increase in production.

The records from the Shandy and Short Research Groves justify careful study by grove operators because of the fact that carefully measured records indicate that the grower can use excess fertilizer and depress production without visible symptoms or trouble.

A progress report dealing with the use of Fairfield Slag, a low phosphate slag, promises that this material is a valuable soil amendment for many Florida soils which are low in all nutrients. This material carries a wide range of plant nutrients, possibly wider than any other individual soil amendment available.

PETERS HEADS EXCHANGE OFFICERS FOR SIXTH TERM

Phil C. Peters, well known Orange County (Florida) citrus man, has been re-elected to his sixth term as president of the Florida Citrus Exchange. He has been connected with the Exchange since first sitting on its board in 1918.

John T. Lesley, general manager of the large sales cooperative, was also renamed for the new season, along with all other top executives of the organization. All officers and directors of the firm were likewise returned for the 1960-61 season.

Re-elected as officers were, in addition to Peters, C. G. Wilhoit of Vero Beach, first vice president; Ford W. Moody of Palm Harbor, second vice president; G. B. Hurlburt, third vice president; Joe E. Keefe of Dundee, fourth vice president; James Samson of Tampa, treasurer-comptroller; Counts Johnson of Tampa, general counsel and secretary; and E. F. Gudgen and L. C. Johnson of Tampa, assistant secretaries.

Many Inquiries Bring USDA Statement on Chemical Pesticides

The 1960 growing season has brought to the U. S. Department of Agriculture an unprecedented number of inquiries with respect to the proper use of pesticides. Department personnel have been deluged with inquiries as to which chemicals can be legally used and how they should be used.

The following statement is intended to clarify for registrants, agricultural institutions, growers, and others, the status of pesticide chemicals presently registered under the Federal Insecticide, Fungicide, and Rodenticide Act for use on food or food crops.

The Federal Insecticide, Fungicide, and Rodenticide Act is designed to protect consumers, as well as persons who handle and use pesticides, or who may be exposed to these chemicals. The law is administered by the Department with a view to insuring a safe, abundant, wholesome food supply for everyone.

Labels accepted for registration must bear directions for use which will protect the public. The Department has always interpreted this provision to mean that the accepted use pattern must be such as to avoid injurious residues of pesticide chemicals in or on food or feed.

In evaluating a proposed pattern of use the Department requires the applicant to submit experimental data in support of the proposed registration. Such data are supplemented with information obtained from many sources, including other Federal agencies. In addition, the experience of research, marketing, and extension specialists of State and private agricultural institutions is taken into account.

Each registration of a pesticide chemical intended for use on food or feed crops is based on the best available scientific evidence and opinion at time of registration. Registration is withheld when there is evidence that an illegal residue will remain on treated crops when directions are followed.

Chemical manufacturers, distributors, and other registrants are expected to assume full responsibility for compliance with applicable laws

Cooperative Extension Work in Agriculture and Home Economics, University of Florida, Florida State University and United States Department of Agriculture Cooperating. M. O. Watkins, Director.

and regulations governing the marketing of pesticides.

Industry is urged to act promptly when new information indicates that an existing label must be revised or withdrawn.

The Department encourages growers, registrants, agricultural groups, and other interested parties to adhere strictly to the patterns of use set forth on registered labels. The Department will continue its present patterns of label acceptance in accordance with established procedures. Whenever evidence becomes available to warrant modification of any accepted pattern of use, the registrant will be notified to make necessary label revisions to comply with applicable provisions of the law.

SOME SIXTY FLORIDA GROWERS JOIN MUTUAL'S CITRUS WORLD TOUR

Some 60 Florida citrus growers have indicated they will join Florida Citrus Mutual's World Citrus

Tour of eight European and Middle Eastern countries, Robert W. Rutledge, Mutual general manager, said today.

Rutledge said the three-week tour is scheduled to begin early in September and will continue until about Oct. 1. The growers will visit most of the major citrus producing and marketing centers of the world. Points on the tour include London, Amsterdam, Rotterdam, Hamburg, Zurich, Rome, Naples, Catania, Tel Aviv, Madrid, Valencia, Grenada and Paris.

An all-expenses paid trip on the citrus tour was awarded to a Mutual member who attended the cooperative's 12th Annual Membership Meeting in Winter Haven, June 21st. The trip was one of the 25 door prizes presented.

Winner of the Mutual-sponsored Florida Citrus Writing Competition, which was held in connection with the annual meeting and supervised by a special committee of the Florida Press Association, was also awarded an expenses paid trip on the tour.

Mutual also sponsored the Florida Citrus Photography Competition in connection with the meeting. Winners of the photography competition were awarded cash prizes.

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Reports Of Our Field Men . . .

SOUTH POLK, HIGHLANDS, HARDEE AND DeSOTO COUNTIES

C. R. Wingfield
Phone: Glendale 3-4537
Avon Park, Fla.

June has been a month of variable weather conditions. Just about time we thought we would have to start irrigation plants we would have showers that have kept moisture in a fairly good condition. High temperatures and winds will dry out the soils very quickly unless we have frequent showers at this season of the year.

The summer fertilizer application has been finished and the trees are looking good where moisture has not been a problem. Fruit has sized up very well and although there has been a heavy fruit drop, due to changeable weather, it looks like a fair crop will hold. Do not fail to continue to feed young trees every 6 to 8 weeks to insure continued growth during the Summer months. Time the last application so as to get growth hardened before cold weather.

Your Summer clean up spray is now due and what is used should be adapted to your needs. The Oil-Zineb combination is the old reliable. Inspection for insect activity should be made and time the spraying where it will give best control.

HILLSBOROUGH, PASCO AND SUMTER COUNTIES

C. W. Dean
Gibson, Fla.
Phone Tampa 40-2592

Dry weather is taking its part in the different vegetables and citrus groves where the growers have no means of irrigation.

It seems that the oranges were slowed down in dropping. Grapefruit are still showing signs of droppage. Some growers have really had a heavy droppage of their fruits, and some have held very good. Personally, I think the droppage will decrease through the next couple of weeks and after will hold the remainder — unless we have some unforeseen catastrophe.

NORTH CENTRAL FLORIDA

V. E. Bourland
Winter Garden, Fla.
Phone 107

We are having hot, dry weather. We could use a good rain. Young trees being watered, and most irrigating plants are going. Groves have been fertilized and worked, waiting for the rain. Most groves still have a good crop set, but some are still dropping.

Most of the growers are ready to do their summer spraying, holding up on account of being so dry and hot.

HIGHLANDS AND POLK COUNTIES

R. E. Lassiter, Jr. & R. S. Carlin
P. O. Box 1304
Winter Haven, Fla.

During the month of June we have received some good rains in much of this area. However, growers were beginning to concern themselves with irrigation just before it started. The summer fertilizer application is practically completed at this time of writing, and growers are beginning to think about the summer scalcicide sprays.

Rust Mite populations have been increasing and some growers have had to dust their blocks due to the fact that it was a little early for the scalcicide spray. We have noticed quite a few Mealy Bugs to be present in some areas. These insects are hard to control at this time of the year due to the fact that they are generally well protected under the button of the fruit.

We experienced quite a heavy fruit drop following the dry weather and it looks at this time as though our crop for the coming year will be somewhat less than we were earlier anticipating. This seems to be especially true with the Valencia oranges.

Growers should continue to fertilize their young trees every six weeks during the summer. The spraying of these trees should not be omitted with the application of the summer scalcicide.

WEST HILLSBOROUGH, PASCO AND PINELLAS COUNTIES

J. W. Boulware
Phone Webster 8-2638
Tampa, Fla.

In spite of some very dry weather in June our groves continue to remain generally in excellent condition. However, the drought did bring out more evidence of root damage due to last summer's excessive rains.

We have been having considerable leaf drop due to greasy spot in some groves. Unfortunately the damage is done by greasy spot with little or no advance warning. The best control seems to be to carefully spray infested groves in order to prevent it from being a future problem.

According to our experiment station the best control is to be obtained by use of copper, oil and zineb, and growers who have had trouble with greasy spot should carefully consider use of post bloom cooper/oil with zineb, and/or summer oil and zineb.

SOUTH HILLSBOROUGH, MANATEE AND SARASOTA COUNTIES

R. C. Revels, Jr.
P. O. Box 3332, Apollo Beach, Fla.

The tomato growers will bring the best tomato season, weather-wise, to a close this week in Hillsborough, Manatee and Sarasota counties. Most growers say that this season has been the best growing season ever, even though it has been the longest. In many sections this is the latest tomatoes have ever been shipped. The overall picture has been good and most growers have made some money.

Now is the time for growers to plant cover crops if you have not already done so. Many different kinds of cover crops are being used however Hairy Indigo seems to be the choice of most growers. Indigo should be planted thick to reduce the possibility of it becoming too large and stalky. This will make it easier to handle when it is cut in next fall. Cover crops should be planted each year especially on light sandy soils not only to help build the soil up but to help keep the winds from moving so much sand. Sand storms during dry weather have become a major problem especially in young citrus.

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*Uncle Bill Says:*

Most anyone kin tell an editor how his newspaper should be run, 'n kin point all the faults he may find with the paper . . . most of us citrus growers has a big supply of hind sight, when things hain't bin jist what we hoped they would be at the beginnin' of the season . . . but the truth is that we need more experience with newspapers 'fore we criticize 'em too much . . . and while most of us has had a heap of experience in raisin' citrus we should be profitin' by our hind sight from previous years 'fore we start bawlin' out anybody in the citrus field about the mistakes they may have made.

Fact is they ain't none of us who is plumb perfect, no matter how much experience we may have had . . . so realizin' they may be some few things we don't know 'bout a lot of things, we should be learnin' more and more about growin' crops . . . and they is lots of sources of information available to all of us, and they ain't none of us too old to learn.

That's jist what a lot of Florida's citrus and truck crop producers is tryin' to do . . . addin' to their knoweldge of these difficult tasks every year . . . which fer our money is one of the reasons why Florida crops is showin' marked improvement with every passin' year.

'Nother thing is that the Experiment Stations, the U. S. D. A., Field representatives and a lot of others is discovering new ingredients for fertilizers 'n insecticides each year which is helpin' to make Florida crops the best they've ever bin in the history of the state.

One of the most important things fer a grower to remembar is that Lyons Fertilizers Produce Maximum Crops of Finest Quality.

WAVERLY'S SEASON COMING TO A CLOSE

By W. C. PEDERSEN

Waverly's 1959-60 fruit season is rapidly coming to a close. This year will probably be one of the earliest closings we have seen in the past generation. The volume of fruit packed in fresh form will also be the smallest Waverly has packed in a very long time.

The reason for the light shipments and the early closing is primarily due to the very light grapefruit crop Waverly had the past season. The three prior years were seasons with very light rainfall in this section, and I feel that this is largely responsible for the unusually light crop of grapefruit. Waverly's grapefruit crop normally would amount to 800,000 or 900,000 boxes, of which one-third is seedless and two-thirds seeded varieties. This year the total will only amount to about 350,000 boxes.

Tangerines were also extremely light this year. Our crop is usually over 100,000 boxes. This year it was less than 50,000. If it were not that we had had almost a normal crop of oranges, we would have had a very poor season. Light crops do not go hand in hand with low handling costs or good quality. However, in spite of the quantity and quality, Waverly members will get fair returns for their fruit . . . not equal to last year, which was a banner year, but more in line with what we can expect until we have another freeze or some other disaster to cause our supply to be far less than the demand.

While this year's grapefruit crop was exceedingly light, the prospects for grapefruit next year look very good at this time. The young fruit is beginning to size up and has thinned itself out, until we feel that the set now on the trees is more or less permanent, unless, of course, we have too much of this dry weather, or some other setback.

While the orange crop does not appear to be quite as heavy as the grapefruit crop, still there seems to be a good set on most trees. Green oranges are small and it is a little difficult to see them now. It is still more difficult to see tangerines at this time of year, but from all indications there will be a very heavy crop on Waverly's groves.

With summer weather officially here again, Florida homeowners are warned of the presence of chinch bugs, the annual threat to St. Augustine grass lawns in the state.

SCALES ACQUIRES G & S PACKING CO.

Key Scales, 22-year veteran in the Florida citrus deal and for ten years a member of the Florida Citrus Commission, serving as head of its ad and merchandising committee and as chairman of the state agency and now as legislative chairman, announced recently he had acquired full control of G&S Packing Co., which specializes in wholesale gift fruit packages, serving retail outlets over the state.

The G&S firm was established five years ago, and last year sent out some 200,000 gift fruit packages on orders from retail outlets, using the customer's labels.

Utilizing a streamlined modern packing house here, the firm, now fully controlled by Scales, operating usually from Nov. 1 through the month of June "or just as long as we can obtain top quality fruit for the gift packages", has no retail outlets of its own and no labels.

Classified Ads

CITRUS TREES—Quality Registered and Non-registered Citrus trees—Popular Varieties—Rough Lemon and Sour Orange Root Stocks—Complete Planting Service if needed. ADAMS CITRUS NURSERY, Winter Haven, CY 3-6075.

EXTRA FINE QUALITY Valencia. Pineapple, Hamlin orange trees for immediate delivery or will hold until your planting date. Will bud your variety of citrus on rough lemon or sour orange stock for future delivery. WADE H. WARDLAW, Phone 3812, Box 83, FROST-PROOF, FLORIDA.

PACKING HOUSE MACHINERY — Out of 5-car packing house — Washers, Polishers, Steel Sizers, Stamping Machine, and many other items not listed. Write or phone for list. HOLDEN CAWTHEN
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250 VALVES — Heavy duty, flange type, 125 WSP-200 OWG, Walworth crane, Lukenheimer, etc., Gate, Globe, regulating, mixing and check valves. Sizes 1" to 12".

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Hamlin, valencia, pineapple and temple oranges; orlando and mineola tangels for spring or summer planting. Nemotode free. Prices on request. Crescent Farms, P. O. Box 390, Bradenton, Florida. Telephone 2-3221 or 2-7004.

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BRUCE SKINNER HEADS COMMISSION'S ADVERTISING AND MERCHANDISING COMMITTEE

Bruce W. Skinner of Dunedin recently was named chairman of the Florida Citrus Commission's important Advertising and Merchandising Committee which administers almost 90 per cent of the more than \$7 million annual budget of the Commission.

Skinner, 44, has been a member of the Commission since 1956. He was appointed that year by Governor LeRoy Collins, and subsequently reappointed in 1958 and 1960. Commissioners serve without pay and are appointed by the governor for two year terms.

He is a native of Dunedin and attended the University of Florida and the Graduate School of Business Administration at Harvard University. He and his father, B. C. Skinner, have been associated with the citrus industry for many years. He is presently serving as general manager of the citrus division of H. P. Hood and Sons, Inc., in Dunedin, a large concentrate operation.

While a member of the Commission, Skinner has served on many of its vital committees. He has been on the Advertising and Merchandising Committee for four years. He has also served as chairman of the important budget committee since 1957.

Other committees on which he has served include the Research Committee, the Concentrate Committee, Bond and License and Grapefruit Rebate Committees, Administrative Committee, and the Processing Committee.

RURAL COMMON SENSE

By SPUDS JOHNSON

American farmers face a serious economic situation in spite of new heights of prosperity in the nonagricultural sectors of our economy. Their production expenses have stayed high and costs of processing and marketing farm products have continued to rise.

Despite these unfavorable cost-price relationships, farm output has continued at record levels and seems likely to remain high. Assuming no unforeseen situations that raise demand, nor widespread crop failure to reduce output, the farmer may continue for several years to be burdened with surpluses and with downward pressure on prices for his products.

Present prospects for population growth beyond 1980 point to continued expansion in agricultural mar-

WRIGHT NAMED 17th CHAIRMAN FLORIDA CITRUS COMMISSION

J. Dan Wright, Jr., of Sanford, prominent 44-year-old citrus grower and businessman, was elected 17th chairman of the Florida Citrus Commission at the State agency's annual organizational meeting in Lakeland.

Wright succeeds J. R. (Rip) Graves of Vero Beach who stepped down after serving two years as Commission head. All 12 members of the Commission are appointed by the Governor and serve without pay.

"This is one of the greatest honors

kets well beyond the next two decades.

With the continued adoption of modern technology, the output of American farms could easily increase faster than potential markets for some time to come. But further improvements in technology are essen-

of my life," Wright said after taking over the Chairman's gavel. "I will do everything in my power to handle this high position with decorum and honor while seeing that all segments of the industry receive fair and courteous treatment."

tial to the long-time prosperity of agriculture and the nation.

Such problems seem inescapable as a result of the American way of life made possible by rapid adoption of technological advances based on research.

Research is needed to develop increasingly efficient methods for minimizing the costs and hazards of production and marketing.

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of the fact that High Quality Fruit
him better returns for his citrus crop
erior fruit would bring.

And it is just as much a foregone conclusion
that in order to raise High Quality Fruit in
adequate volume it is necessary to have strong,
healthy trees.

In order to have such trees Florida Growers
have long since adopted the practice of seeing
that their citrus trees were adequately and pro-
perly nourished by the application of high type
fertilizer which has been designed to care for
the requirements of each particular grove.

The fact that so large a number of the state's
most successful growers have continued
throughout the years to apply Lyons Fertilizers
to their groves furnishes ample proof of the
high quality of our fertilizers as is reflected in
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cultural practices or in production we
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Service Men will gladly give every
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FERTILIZERS
Produce
MAXIMUM
CROPS
Of
FINEST
QUALITY**